

REGULATIONS FOR THE CONTROL AND ABATEMENT OF AIR POLLUTION (9 VAC 5 CHAPTER 40)

9 VAC 5 CHAPTER 40.  
EXISTING STATIONARY SOURCES.

PART II.  
Emission Standards.

ARTICLE 44  
Hospital/Medical/Infectious Waste Incinerators

~~9 VAC 5-40-6000. Applicability and designation of affected facility.~~

~~A. Except as provided in subsections C and D of this section, the affected facility to which the provisions of this article apply is each individual HMIWI for which construction was commenced on or before June 20, 1996.~~

~~B. The provisions of this article apply throughout the Commonwealth of Virginia.~~

~~C. Exempted from the provisions of this article are the following:~~

~~1. Combustors during periods when only pathological waste, low-level radioactive waste, or chemotherapeutic waste is burned, provided the owner:~~

~~a. Notifies the board of an exemption claim; and~~

~~b. Keeps records on a calendar quarter basis of the periods of time when only pathological waste, low-level radioactive waste, or chemotherapeutic waste is burned.~~

~~2. Any co-fired combustor if the owner of the co-fired combustor:~~

~~a. Notifies the board of an exemption claim;~~

~~b. Provides an estimate of the relative weight of hospital waste, medical/infectious waste, and other fuels and or wastes to be combusted; and~~

~~c. Keeps records on a calendar quarter basis of the weight of hospital waste and medical/infectious waste combusted, and the weight of all other fuels and wastes combusted at the co-fired combustor.~~

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~~3. Any combustor required to have a permit under § 3005 of the Solid Waste Disposal Act (42 USC § 6901 et seq.).~~

~~4. Any combustor which meets the applicability requirements under subpart Ea or Eb of 40 CFR Part 60 (standards for certain municipal waste combustors).~~

~~5. Any pyrolysis unit.~~

~~6. Cement kilns firing hospital waste and medical/infectious waste or both.~~

~~D. The provisions of this article do not apply to affected facilities subject to other emission standards in this part, including the standards in 9 VAC 5 Chapter 40, Article 46 (9 VAC 540-7950 et seq.).~~

~~E. Physical or operational changes made to an existing HMIWI unit solely for the purpose of complying with this article are not considered a modification and do not result in an existing HMIWI unit becoming subject to the provisions of subpart Ec of 40 CFR Part 60 (see § 60.50c of 40 CFR Part 60).~~

~~E. Beginning September 15, 2000, affected facilities subject to this article shall operate pursuant to a federal operating permit.~~

~~9 VAC 5-40-6010. Definitions.~~

~~A. For the purpose of these regulations and subsequent amendments or any orders issued by the board, the words or terms shall have the meaning given them in subsection C of this section.~~

~~B. As used in this article, all terms not defined here shall have the meaning given them in 9 VAC 5 Chapter 10 (9 VAC 5-10-10 et seq.), unless otherwise required by context.~~

~~C. Terms defined.~~

~~"Batch HMIWI" means an HMIWI that is designed such that neither waste charging nor ash removal can occur during combustion.~~

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~~"Biologicals" means preparations made from living organisms and their products, including vaccines, cultures, etc., intended for use in diagnosing, immunizing, or treating humans or animals or in research pertaining thereto.~~

~~"Blood products" means any product derived from human blood, including but not limited to blood plasma, platelets, red or white blood corpuscles, and other derived licensed products, such as interferon, etc.~~

~~"Body fluids" means liquid emanating or derived from humans and limited to blood; dialysate; amniotic, cerebrospinal, synovial, pleural, peritoneal and pericardial fluids; and semen and vaginal secretions.~~

~~"Bypass stack" means a device used for discharging combustion gases to avoid severe damage to the air pollution control device or other equipment.~~

~~"Chemotherapeutic waste" means waste material resulting from the production or use of antineoplastic agents used for the purpose of stopping or reversing the growth of malignant cells.~~

~~"Co-fired combustor" means a unit combusting hospital waste and medical/infectious waste or both with other fuels or wastes (e.g., coal, municipal solid waste) and subject to an enforceable requirement limiting the unit to combusting a fuel feed stream, 10 percent or less of the weight of which is comprised, in aggregate, of hospital waste and medical/infectious waste as measured on a calendar quarter basis. For purposes of this definition, pathological waste, chemotherapeutic waste, and low-level radioactive waste are considered "other" wastes when calculating the percentage of hospital waste and medical/infectious waste combusted.~~

~~"Combustor" means any type of stationary equipment in which solid, liquid or gaseous fuels and refuse are burned (including, but not limited to, furnaces, ovens, and kilns) for the primary~~

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~~purpose of destroying matter or reducing the volume, or both, of the waste by removing combustible matter.~~

~~"Commenced" means an owner has undertaken a continuous program of construction or modification or that an owner has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.~~

~~"Compliance schedule" means a legally enforceable schedule specifying a date or dates by which a source must comply with specific emission limits contained in this article or with any increments of progress to achieve such compliance.~~

~~"Construction" means fabrication, erection, or installation of an affected facility.~~

~~"Continuous emission monitoring system" means a monitoring system for continuously measuring and recording the emissions of a pollutant from an affected facility.~~

~~"Continuous HMIWI" means an HMIWI that is designed to allow waste charging and ash removal during combustion.~~

~~"Dioxins/furans" means the combined emissions of tetra-through octa-chlorinated dibenzo-para-dioxins and dibenzofurans, as measured by Reference Method 23.~~

~~"Dry scrubber" means an add-on air pollution control system that injects dry alkaline sorbent (dry injection) or sprays an alkaline sorbent (spray dryer) to react with and neutralize acid gases in the HMIWI exhaust stream forming a dry powder material.~~

~~"Fabric filter" means an add-on air pollution control system that removes particulate matter and nonvaporous metals emissions by passing flue gas through filter bags.~~

~~"Facilities manager" means the individual in charge of purchasing, maintaining, and operating the HMIWI or the owner's representative responsible for the management of the HMIWI.~~

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~~Alternative titles may include director of facilities or vice president of support services.~~

~~"Federal operating permit" means a permit issued under Article 1 (9 VAC 5-80-50 et seq.) or Article 3 (9 VAC 5-80-360 et seq.) of Part II of 9 VAC 5 Chapter 80.~~

~~"High-air phase" means the stage of the batch operating cycle when the primary chamber reaches and maintains maximum operating temperatures.~~

~~"Hospital" means any facility which has an organized medical staff, maintains at least six inpatient beds, and where the primary function of the institution is to provide diagnostic and therapeutic patient services and continuous nursing care primarily to human inpatients who are not related and who stay on average in excess of 24 hours per admission. This definition does not include facilities maintained for the sole purpose of providing nursing or convalescent care to human patients who generally are not acutely ill but who require continuing medical supervision.~~

~~"Hospital/medical/infectious waste incinerator" or "HMIWI" or "HMIWI unit" means any device that combusts any amount of hospital waste and medical/infectious waste or both.~~

~~"Hospital/medical/infectious waste incinerator operator" or "HMIWI operator" means any person who operates, controls or supervises the day-to-day operation of an HMIWI.~~

~~"Hospital waste" means discards generated at a hospital, except unused items returned to the manufacturer. The definition of hospital waste does not include human corpses, remains, and anatomical parts that are intended for interment or cremation.~~

~~"Infectious agent" means any organism (such as a virus or bacteria) that is capable of being communicated by invasion and multiplication in body tissues and capable of causing disease or adverse health impacts in humans.~~

~~"Intermittent HMIWI" means an HMIWI that is designed to allow waste charging, but not~~

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~~ash removal, during combustion.~~

~~"Large HMIWI" means:~~

- ~~1. Except as provided in subdivision 2 of this definition,~~
  - ~~a. An HMIWI whose maximum design waste burning capacity is more than 500 pounds per hour;~~
  - ~~b. A continuous or intermittent HMIWI whose maximum charge rate is more than 500 pounds per hour; or~~
  - ~~c. A batch HMIWI whose maximum charge rate is more than 4,000 pounds per day.~~
- ~~2. The following are not large HMIWI:~~
  - ~~a. A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 500 pounds per hour; or~~
  - ~~b. A batch HMIWI whose maximum charge rate is less than or equal to 4,000 pounds per day.~~

~~"Low-level radioactive waste" means waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities that exceed applicable federal or state standards for unrestricted release. Low-level radioactive waste is not high-level radioactive waste, spent nuclear fuel, or by-product material as defined by the Atomic Energy Act of 1954 (42 USC 2014(e)(2)).~~

~~"Malfunction" means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused, in part, by poor maintenance or careless operation are not malfunctions.~~

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~~During periods of malfunction the HMIWI operator shall operate within established parameters as much as possible, and monitoring of all applicable operating parameters shall continue until all waste has been combusted or until the malfunction ceases, whichever comes first.~~

~~"Maximum charge rate" means:~~

~~1. For continuous and intermittent HMIWI, 110 percent of the lowest three-hour average charge rate measured during the most recent emissions test demonstrating compliance with all applicable emission limits.~~

~~2. For batch HMIWI, 110 percent of the lowest daily charge rate measured during the most recent emissions test demonstrating compliance with all applicable emission limits.~~

~~"Maximum design waste burning capacity" means:~~

~~1. For intermittent and continuous HMIWI,~~

$$C = P_v \times 15,000 / 8,500$$

~~where:~~

~~C = HMIWI capacity, lb/hr~~

~~P<sub>v</sub> = primary chamber volume, ft<sup>3</sup>~~

~~15,000 = primary chamber heat release rate factor, Btu/ft<sup>3</sup>/hr~~

~~8,500 = standard waste heating value, Btu/lb;~~

~~2. For batch HMIWI,~~

$$C = P_v \times 4.5 / 8$$

~~where:~~

~~C = HMIWI capacity, lb/hr~~

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$P_v$  = primary chamber volume, ft<sup>3</sup>

4.5 = waste density, lb/ft<sup>3</sup>

8 = typical hours of operation of a batch HMIWI, hours.

~~"Maximum fabric filter inlet temperature" means 110 percent of the lowest three-hour average temperature at the inlet to the fabric filter (taken, at a minimum, once every minute) measured during the most recent emissions test demonstrating compliance with the dioxin/furan emission limit.~~

~~"Maximum flue gas temperature" means 110 percent of the lowest three-hour average temperature at the outlet from the wet scrubber (taken, at a minimum, once every minute) measured during the most recent emissions test demonstrating compliance with the mercury emission limit.~~

~~"Medical/infectious waste" means any waste generated in the diagnosis, treatment, or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals that is listed in subdivisions 1 through 7 of this definition. The definition of medical/infectious waste does not include hazardous waste identified or listed under the regulations in 40 CFR Part 261; household waste, as defined in 40 CFR Part 261.4(b)(1); ash from incineration of medical/infectious waste, once the incineration process has been completed; human corpses, remains, and anatomical parts that are intended for interment or cremation; and domestic sewage materials identified in 40 CFR Part 261.4(a)(1).~~

~~1. Cultures and stocks of infectious agents and associated biologicals, including: cultures from medical and pathological laboratories; cultures and stocks of infectious agents from research and industrial laboratories; wastes from the production of biologicals; discarded live and attenuated vaccines; and culture dishes and devices used to transfer, inoculate, and mix cultures.~~

~~2. Human pathological waste, including tissues, organs, and body parts.~~

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~~and body fluids that are removed during surgery or autopsy, or other medical procedures, and specimens of body fluids and their containers.~~

~~3. Human blood and blood products including:~~

~~a. Liquid waste human blood;~~

~~b. Products of blood;~~

~~c. Items saturated and dripping or both with human blood; or~~

~~d. Items that were saturated and dripping or both with human blood~~

~~that are now caked with dried human blood; including serum, plasma, and other blood components, and their containers, which were used or intended for use in either patient care, testing and laboratory analysis or the development of pharmaceuticals. Intravenous bags are also include in this category.~~

~~4. Sharps that have been used in animal or human patient care or treatment~~

~~or in medical, research, or industrial laboratories, including hypodermic needles, syringes (with or without the attached needle), pasteur pipettes, scalpel blades, blood vials, needles with attached tubing, and culture dishes (regardless of presence of infectious agents). Also included are other types of broken or unbroken glassware that were in contact with infectious agents, such as used slides and cover slips.~~

~~5. Animal waste including contaminated animal carcasses, body parts, and~~

~~bedding of animals that were known to have been exposed to infectious agents during research (including research in veterinary hospitals), production of biologicals or testing of pharmaceuticals.~~

~~6. Isolation wastes including biological waste and discarded materials~~

~~contaminated with blood, excretions, exudates, or secretions from humans who are isolated to protect others from certain highly communicable diseases, or isolated animals known to be infected with highly~~

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~~communicable diseases.~~

~~7. Unused sharps including the following unused, discarded sharps:  
hypodermic needles, suture needles, syringes, and scalpel blades.~~

~~"Medium HMIWI" means:~~

- ~~1. Except as provided in subdivision 2 of this definition,
  - ~~a. An HMIWI whose maximum design waste burning capacity is more than 200 pounds per hour but less than or equal to 500 pounds per hour;~~
  - ~~b. A continuous or intermittent HMIWI whose maximum charge rate is more than 200 pounds per hour but less than or equal to 500 pounds per hour; or~~
  - ~~c. A batch HMIWI whose maximum charge rate is more than 1,600 pounds per day but less than or equal to 4,000 pounds per day.~~~~
- ~~2. The following are not medium HMIWI:
  - ~~a. A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 pounds per hour or more than 500 pounds per hour; or~~
  - ~~b. A batch HMIWI whose maximum charge rate is more than 4,000 pounds per day or less than or equal to 1,600 pounds per day.~~~~

~~"Minimum dioxin/furan sorbent flow rate" means 90 percent of the highest three-hour average dioxin/furan sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent emissions test demonstrating compliance with the dioxin/furan emission limit.~~

~~"Minimum mercury sorbent flow rate" means 90 percent of the highest three-hour average mercury sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent emissions test demonstrating compliance with the mercury emission limit.~~

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~~"Minimum hydrogen chloride sorbent flow rate" means 90 percent of the highest three-hour average hydrogen chloride sorbent flow rate (taken, at a minimum, once every hour) measured during the most recent emissions test demonstrating compliance with the hydrogen chloride emission limit.~~

~~"Minimum horsepower or amperage" means 90 percent of the highest three-hour average horsepower or amperage to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent emissions test demonstrating compliance with the applicable emission limits.~~

~~"Minimum pressure drop across the wet scrubber" means 90 percent of the highest three-hour average pressure drop across the wet scrubber particulate matter control device (taken, at a minimum, once every minute) measured during the most recent emissions test demonstrating compliance with the particulate matter emission limit.~~

~~"Minimum scrubber liquor flow rate" means 90 percent of the highest three-hour average liquor flow rate at the inlet to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent emissions test demonstrating compliance with all applicable emission limits.~~

~~"Minimum scrubber liquor pH" means 90 percent of the highest three-hour average liquor pH at the inlet to the wet scrubber (taken, at a minimum, once every minute) measured during the most recent emissions test demonstrating compliance with the hydrogen chloride emission limit.~~

~~"Minimum secondary chamber temperature" means 90 percent of the highest three-hour average secondary chamber temperature (taken, at a minimum, once every minute) measured during the most recent emissions test demonstrating compliance with the particulate matter, carbon monoxide, or dioxin/furan emission limits.~~

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~~"Modification" means any change to an HMIWI unit after March 16, 1998 such that:~~

~~1. The cumulative costs of the modifications, over the life of the unit, exceed 50 percent of the original cost of the construction and installation of the unit (not including the cost of any land purchased in connection with such construction or installation) updated to current costs, or~~

~~2. The change involves a physical change in or change in the method of operation of the unit which increases the amount of any air pollutant emitted by the unit for which standards have been established under section 129 or section 111.~~

~~"Operating day" means a 24-hour period between 12:00 midnight and the following midnight during which any amount of hospital waste or medical/infectious waste is combusted at any time in the HMIWI.~~

~~"Operation" means the period during which waste is combusted in the incinerator excluding periods of startup or shutdown.~~

~~"Particulate matter" means the total particulate matter emitted from an HMIWI as measured by Reference Method 5 or Reference Method 29.~~

~~"Pathological waste" means waste material consisting of only human or animal remains, anatomical parts, or tissue, the bags and containers used to collect and transport the waste material, and animal bedding (if applicable).~~

~~"Primary chamber" means the chamber in an HMIWI that receives waste material, in which the waste is ignited, and from which ash is removed.~~

~~"Pyrolysis" means the endothermic gasification of hospital waste and medical/infectious waste or both using external energy.~~

~~"Secondary chamber" means a component of the HMIWI that receives combustion~~

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~~gases from the primary chamber and in which the combustion process is completed.~~

~~"Shutdown" means the period of time after all waste has been combusted in the primary chamber. For continuous HMIWI, shutdown shall commence no less than two hours after the last charge to the incinerator. For intermittent HMIWI, shutdown shall commence no less than four hours after the last charge to the incinerator. For batch HMIWI, shutdown shall commence no less than five hours after the high-air phase of combustion has been completed.~~

~~"Small HMIWI" means:~~

- ~~1. Except as provided in subdivision 2 of this definition,
  - ~~a. An HMIWI whose maximum design waste burning capacity is less than or equal to 200 pounds per hour;~~
  - ~~b. A continuous or intermittent HMIWI whose maximum charge rate is less than or equal to 200 pounds per hour; or~~
  - ~~c. A batch HMIWI whose maximum charge rate is less than or equal to 1,600 pounds per day.~~~~
- ~~2. The following are not small HMIWI:
  - ~~a. A continuous or intermittent HMIWI whose maximum charge rate is more than 200 pounds per hour;~~
  - ~~b. A batch HMIWI whose maximum charge rate is more than 1,600 pounds per day.~~~~

~~"Small, rural HMIWI" means any small HMIWI which is located more than 50 miles from the boundary of the nearest Metropolitan Statistical Area and which burns less than 2,000 pounds per week of hospital waste and medical/infectious waste. The 2,000 pounds-per-week limitation does not~~

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~~apply during emissions tests.~~

~~"Startup" means the period of time between the activation of the system and the first charge to the unit. For batch HMIWI, startup means the period of time between activation of the system and ignition of the waste.~~

~~"Wet scrubber" means an add-on air pollution control device that utilizes an alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics), and to absorb and neutralize acid gases, or both.~~

~~9 VAC 5-40-6020. Limit for particulate matter.~~

~~No owner or other person shall cause or permit to be discharged into the atmosphere from any HMIWI any particulate emissions in excess of the following limits:~~

- ~~1. For small HMIWI: 0.05 grains per dry standard cubic foot (115 milligrams per dry standard cubic meter).~~
- ~~2. For medium HMIWI: 0.03 grains per dry standard cubic foot (69 milligrams per dry standard cubic meter).~~
- ~~3. For large HMIWI: 0.015 grains per dry standard cubic foot (34 milligrams per dry standard cubic meter).~~
- ~~4. For small, rural HMIWI: 0.086 grains per dry standard cubic foot (197 milligrams per dry standard cubic meter).~~

~~9 VAC 5-40-6030. Limit for carbon monoxide.~~

~~No owner or other person shall cause or permit to be discharged into the atmosphere from any HMIWI any carbon monoxide emissions in excess of the following limits:~~

- ~~1. For small HMIWI: 40 parts per million by volume.~~

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2. ~~For medium HMIWI: 40 parts per million by volume.~~
3. ~~For large HMIWI: 40 parts per million by volume.~~
4. ~~For small, rural HMIWI: 40 parts per million by volume.~~

~~9 VAC 5-40-6040. Limit for dioxins/furans.~~

~~No owner or other person shall cause or permit to be discharged into the atmosphere from any HMIWI any dioxin/furan emissions in excess of the following limits:~~

~~1. For small HMIWI: 55 grains per dry billion standard cubic feet (125 nanograms per dry standard cubic meter) total dioxin/furan or 1.0 grains per billion standard cubic meter total TEQ (2.3 nanograms per dry standard cubic meter TEQ).~~

~~2. For medium HMIWI: 55 grains per billion dry standard cubic feet (125 nanograms per dry standard cubic meter) total dioxin/furan or 1.0 grains per billion standard cubic meter total TEQ (2.3 nanograms per dry standard cubic meter TEQ).~~

~~3. For large HMIWI: 55 grains per billion dry standard cubic feet (125 nanograms per dry standard cubic meter) total dioxin/furan or 1.0 grains per billion standard cubic meter total TEQ (2.3 nanograms per dry standard cubic meter TEQ).~~

~~4. For small, rural HMIWI: 350 grains per billion dry standard cubic feet (800 nanograms per dry standard cubic meter) total dioxin/furan or 6.6 grains per billion standard cubic meter total TEQ (15 nanograms per dry standard cubic meter TEQ).~~

~~9 VAC 5-40-6050. Limit for hydrogen chloride.~~

~~No owner or other person shall cause or permit to be discharged into the atmosphere from any HMIWI any hydrogen chloride emissions in excess of the following limits:~~

1. ~~For small HMIWI: 100 parts per million by volume or 93 percent reduction.~~

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- ~~2. For medium HMIWI: 100 parts per million by volume or 93 percent reduction.~~
- ~~3. For large HMIWI: 100 parts per million by volume or 93 percent reduction.~~
- ~~4. For small, rural HMIWI: 3,100 parts per million by volume.~~

~~9 VAC 5-40-6060. Limit for sulfur dioxide.~~

~~No owner or other person shall cause or permit to be discharged into the atmosphere from any HMIWI any sulfur dioxide emissions in excess of the following limits:~~

- ~~1. For small HMIWI: 55 parts per million by volume.~~
- ~~2. For medium HMIWI: 55 parts per million by volume.~~
- ~~3. For large HMIWI: 55 parts per million by volume.~~
- ~~4. For small, rural HMIWI: 55 parts per million by volume.~~

~~9 VAC 5-40-6070. Limit for nitrogen oxides.~~

~~No owner or other person shall cause or permit to be discharged into the atmosphere from any HMIWI any nitrogen oxide emissions in excess of the following limits:~~

- ~~1. For small HMIWI: 250 parts per million by volume.~~
- ~~2. For medium HMIWI: 250 parts per million by volume.~~
- ~~3. For large HMIWI: 250 parts per million by volume.~~
- ~~4. For small, rural HMIWI: 250 parts per million by volume.~~

~~9 VAC 5-40-6080. Limit for lead.~~

~~No owner or other person shall cause or permit to be discharged into the atmosphere from any HMIWI any lead emissions in excess of the following limits:~~

- ~~1. For small HMIWI: 0.52 grains per thousand dry standard cubic feet (1.2 milligrams per dry standard cubic meter) or 70 percent reduction.~~

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~~2. For medium HMIWI: 0.52 grains per thousand dry standard cubic feet (1.2 milligrams per dry standard cubic meter) or 70 percent reduction.~~

~~3. For large HMIWI: 0.52 grains per thousand dry standard cubic feet (1.2 milligrams per dry standard cubic meter) or 70 percent reduction.~~

~~4. For small, rural HMIWI: 4.4 grains per thousand dry standard cubic feet (10 milligrams per dry standard cubic meter).~~

~~9 VAC 5-40-6090. Limit for cadmium.~~

~~No owner or other person shall cause or permit to be discharged into the atmosphere from any HMIWI any cadmium emissions in excess of the following limits:~~

~~1. For small HMIWI: 0.07 grains per thousand dry standard cubic feet (0.16 milligrams per dry standard cubic meter) or 65 percent reduction.~~

~~2. For medium HMIWI: 0.07 grains per thousand dry standard cubic feet (0.16 milligrams per dry standard cubic meter) or 65 percent reduction.~~

~~3. For large HMIWI: 0.07 grains per thousand dry standard cubic feet (0.16 milligrams per dry standard cubic meter).~~

~~4. For small, rural HMIWI: 1.7 grains per thousand dry standard cubic feet (4 milligrams per dry standard cubic meter).~~

~~9 VAC 5-40-6100. Limit for mercury.~~

~~No owner or other person shall cause or permit to be discharged into the atmosphere from any HMIWI any mercury emissions in excess of the following limits:~~

~~1. For small HMIWI: 0.24 grains per thousand dry standard cubic feet (0.55 milligrams per dry standard cubic meter) or 85 percent reduction.~~

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2. ~~For medium HMIWI: 0.24 grains per thousand dry standard cubic feet (0.55 milligrams per dry standard cubic meter) or 85 percent reduction.~~

3. ~~For large HMIWI: 0.24 grains per thousand dry standard cubic feet (0.55 milligrams per dry standard cubic meter) or 85 percent reduction.~~

4. ~~For small, rural HMIWI: 3.3 grains per thousand dry standard cubic feet (7.5 milligrams per dry standard cubic meter).~~

9 VAC 5-40-6110. ~~Limit for visible emissions.~~

A. ~~The provisions of Article 1 (9 VAC 5-40-60 et seq.) of 9 VAC 5 Chapter 40 (Emission Standards for Visible Emissions) apply except that the provisions in subsection B of this section apply instead of 9 VAC 5-40-80.~~

B. ~~No owner or other person shall cause or permit to be discharged into the atmosphere from any HMIWI any visible emissions which exhibit greater than 10 percent opacity, six-minute block average. Failure to meet the requirements of this section because of the presence of condensed water vapor shall not be a violation of this section.~~

9 VAC 5-40-6120. ~~Limit for fugitive dust/emissions.~~

~~The provisions of Article 1 (9 VAC 5-40-60 et seq.) of 9 VAC 5 Chapter 40 (Emission Standards for Fugitive Dust/Emissions, Rule 4-1) apply.~~

9 VAC 5-40-6130. ~~Limit for odor.~~

~~The provisions of Article 2 (9 VAC 5-40-130 et seq.) of 9 VAC 5 Chapter 40 (Emission Standards for Odor, Rule 4-2) apply.~~

9 VAC 5-40-6140. ~~Limit for toxic pollutants.~~

~~The provisions of Article 3 (9 VAC 5-40-160 et seq.) of 9 VAC 5 Chapter 40 (Emission Standards~~

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~~for Toxic Pollutants, Rule 4-3) apply.~~

~~9 VAC 5-40-6150. HMIWI operator training and qualification.~~

~~A. No owner of an affected facility shall allow the affected facility to operate at any time unless a fully trained and qualified HMIWI operator is accessible, either at the facility or available within one hour. The trained and qualified HMIWI operator may operate the HMIWI directly or be the direct supervisor of one or more HMIWI operators.~~

~~B. HMIWI operator training and qualification shall be obtained through a program approved by the Board for Waste Management Facility Operators or by completing the requirements included in subsections C through G of this section.~~

~~C. Training shall be obtained by completing an HMIWI operator training course that includes, at a minimum, the following provisions:~~

- ~~1. Twenty-four hours of training on the following subjects:~~
  - ~~a. Environmental concerns, including pathogen destruction and types of emissions;~~
  - ~~b. Basic combustion principles, including products of combustion;~~
  - ~~c. Operation of the type of incinerator to be used by the HMIWI operator, including proper startup, waste charging, and shutdown procedures;~~
  - ~~d. Combustion controls and monitoring;~~
  - ~~e. Operation of air pollution control equipment and factors affecting performance (if applicable);~~
  - ~~f. Methods to monitor pollutants (continuous emission monitoring systems and monitoring of HMIWI and air pollution control device operating parameters) and equipment calibration~~

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~~procedures (where applicable):~~

~~g. Inspection and maintenance of the HMIWI, air pollution control devices, and continuous emission monitoring systems;~~

~~h. Actions to correct malfunctions or conditions that may lead to malfunction;~~

~~i. Bottom and fly ash characteristics and handling procedures;~~

~~j. Applicable federal, state, and local regulations;~~

~~k. Work safety procedures;~~

~~l. Pre-startup inspections; and~~

~~m. Recordkeeping requirements.~~

~~2. An examination designed and administered by the instructor.~~

~~3. Reference material distributed to the attendees covering the course topics.~~

~~D. Qualification shall be obtained by:~~

~~1. Completion of a training course that satisfies the criteria under subsection C of this section; and~~

~~2. Either six months experience as an HMIWI operator, six months experience as a direct supervisor of an HMIWI operator, or completion of at least two burn cycles under the observation of two qualified HMIWI operators.~~

~~E. Qualification is valid from the date on which the examination is passed or the completion of the required experience, whichever is later.~~

~~E. To maintain qualification, the trained and qualified HMIWI operator shall complete and pass an annual review or refresher course of at least four hours covering, at a minimum, the following:~~

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1. ~~Update of regulations;~~
2. ~~Incinerator operation, including startup and shutdown procedures;~~
3. ~~Inspection and maintenance;~~
4. ~~Responses to malfunctions or conditions that may lead to malfunction; and~~
5. ~~Discussion of operating problems encountered by attendees.~~

G. ~~A lapsed qualification shall be renewed by one of the following methods:~~

1. ~~For a lapse of less than three years, the HMIWI operator shall complete and pass a standard annual refresher course described in subsection F of this section.~~

2. ~~For a lapse of three years or more, the HMIWI operator shall complete and pass a training course with the minimum criteria described in subsection C of this section.~~

H. ~~The owner of an affected facility shall maintain documentation at the facility that address the following:~~

1. ~~Summary of the applicable limits under this article;~~
2. ~~Description of basic combustion theory applicable to an HMIWI;~~
3. ~~Procedures for receiving, handling, and charging waste;~~
4. ~~HMIWI startup, shutdown, and malfunction procedures;~~
5. ~~Procedures for maintaining proper combustion air supply levels;~~
6. ~~Procedures for operating the HMIWI and associated air pollution control systems~~

~~within the limits established under this article;~~

7. ~~Procedures for responding to periodic malfunction or conditions that may lead to malfunction;~~

8. ~~Procedures for monitoring HMIWI emissions;~~

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~~9. Reporting and recordkeeping procedures; and~~

~~10. Procedures for handling ash.~~

~~I. The owner of an affected facility shall establish a program for reviewing the information listed in subsection H of this section annually with each HMIWI operator.~~

~~1. The initial review of the information listed in subsection H of this section shall be conducted within six months after (the effective date of this article) or prior to assumption of responsibilities affecting HMIWI operation, whichever date is later.~~

~~2. Subsequent reviews of the information listed in subsection H of this section shall be conducted annually.~~

~~J. The information listed in subsection H of this section shall be kept in a readily accessible location for all HMIWI operators. This information, along with records of training shall be available for inspection by the board.~~

~~K. The initial training requirements of this section shall be performed within one year from (the effective date of this article).~~

~~L. All training and licensing shall be in accordance with  $\S$  54.1-1212 of the Code of Virginia.~~  
~~9 VAC 5-40-6160. Waste management plans.~~

~~A. The owner of an affected facility shall prepare a waste management plan. The waste management plan shall identify both the feasibility and the approach to separate certain components of solid waste from the health care waste stream in order to reduce the amount of toxic emissions from incinerated waste. A waste management plan may include, but is not limited to, elements such as paper, cardboard, plastics, glass, battery, or metal recycling; or purchasing recycled or recyclable products. A waste management plan may include different goals or approaches for different areas or departments of~~

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~~the facility and need not include new waste management goals for every waste stream. It should identify, where possible, reasonably available additional waste management measures, taking into account the effectiveness of waste management measures already in place, the costs of additional measures, the emission reductions expected to be achieved, and any other environmental or energy impacts they might have. The American Hospital Association publication entitled "An Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities" (see 9 VAC 5-20-21) shall be considered in the development of the waste management plan.~~

~~B. The waste management plan shall be submitted to the board no later than 60 days after the initial emissions test as required under 9 VAC 5-40-6180.~~

~~9 VAC 5-40-6170. Inspections.~~

~~A. The owner shall conduct an initial equipment inspection of each affected small, rural HMIWI by (one year after the effective date of this article). At a minimum, each inspection shall include the following:~~

- ~~1. Inspect all burners, pilot assemblies, and pilot sensing devices for proper operation; clean pilot flame sensor, as necessary;~~
- ~~2. Ensure proper adjustment of primary and secondary chamber combustion air, and adjust as necessary;~~
- ~~3. Inspect hinges and door latches, and lubricate as necessary;~~
- ~~4. Inspect dampers, fans, and blowers for proper operation;~~
- ~~5. Inspect HMIWI door and door gaskets for proper sealing;~~
- ~~6. Inspect motors for proper operation;~~
- ~~7. Inspect primary chamber refractory lining; clean and repair or replace lining as~~

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necessary;

8. ~~Inspect incinerator shell for corrosion and hot spots;~~
9. ~~Inspect secondary and tertiary chambers and stack, clean as necessary;~~
10. ~~Inspect mechanical loader, including limit switches, for proper operation, if~~

applicable;

11. ~~Visually inspect waste bed (grates), and repair or seal, as appropriate;~~
12. ~~For the burn cycle that follows the inspection, document that the incinerator is~~

operating properly and make any necessary adjustments;

13. ~~Inspect air pollution control device(s) for proper operation, if applicable;~~
14. ~~Inspect waste heat boiler systems to ensure proper operation, if applicable;~~
15. ~~Inspect bypass stack components;~~
16. ~~Ensure proper calibration of thermocouples, sorbent feed systems and any~~

other monitoring equipment; and

17. ~~Generally observe that the equipment is maintained in good operating condition.~~

B. ~~The owner shall conduct an equipment inspection of each affected small, rural HMIWI annually (no more than 12 months following the previous annual equipment inspection), as outlined in subsection A of this section.~~

C. ~~Within 10 operating days following an equipment inspection all necessary repairs shall be completed unless the owner obtains written approval from the board establishing a date whereby all necessary repairs of the affected facility shall be completed.~~

9 VAC 5-40-6180. ~~Compliance, emissions testing, and monitoring.~~

- A. ~~The emission limits under this article apply at all times except during periods of startup,~~

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~~shutdown, or malfunction, provided that no hospital waste or medical/infectious waste is charged to the affected facility during startup, shutdown, or malfunction.~~

~~B. Except as provided in subsection K of this section, the owner of an affected facility shall conduct an initial emissions test as required under 9 VAC 5-40-6180 to determine compliance with the emission limits using the procedures and test methods listed in subdivisions B 1 through B 12 of this section. The use of the bypass stack during an emissions test shall invalidate the emissions test.~~

~~1. All emissions tests shall consist of a minimum of three test runs conducted under representative operating conditions.~~

~~2. The minimum sample time shall be one hour per test run unless otherwise indicated.~~

~~3. Reference Method 1 shall be used to select the sampling location and number of traverse points.~~

~~4. Reference Method 3 or 3A shall be used for gas composition analysis, including measurement of oxygen concentration. Reference Method 3 or 3A shall be used simultaneously with each reference method.~~

~~5. The pollutant concentrations shall be adjusted to 7 percent oxygen using the following equation:~~

$$C_{adj} = C_{meas} \frac{(20.9 - 7)}{(20.9 - \%O_2)}$$

~~where:~~

~~$C_{adj}$  = pollutant concentration adjusted to 7 percent oxygen;~~

~~$C_{meas}$  = pollutant concentration measured on a dry basis (20.9-7) = 20.9 percent oxygen--7 percent oxygen (defined oxygen correction basis);~~

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~~20.9 = oxygen concentration in air, percent; and~~

~~%O<sub>2</sub> = oxygen concentration measured on a dry basis, percent.~~

~~6. Reference Method 5 or 29 be used to measure the particulate matter emissions.~~

~~7. Reference Method 9 shall be used to measure stack opacity.~~

~~8. Reference Method 10 or 10B shall be used to measure the carbon monoxide emissions.~~

~~9. Reference Method 23 shall be used to measure total dioxin/furan emissions. The minimum sample time shall be four hours per test run. If the affected facility has selected the toxic equivalency limits for dioxin/furans, under 9 VAC 5-40-6040, the following procedures shall be used to determine compliance:~~

~~a. Measure the concentration of each dioxin/furan tetra-through octa-congener emitted using Reference Method 23.~~

~~b. For each dioxin/furan congener measured in accordance with subdivision B 9 a of this section, multiply the congener concentration by its corresponding toxic equivalency factor specified in Table 4-44A of this article.~~

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TABLE 4-44A  
TOXIC EQUIVALENCY FACTORS

Dioxin/furan congener	Toxic equivalency factor
2,3,7,8-tetrachlorinated dibenzo-p-dioxin	1
1,2,3,7,8-pentachlorinated dibenzo-p-dioxin	0.5
1,2,3,4,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,7,8,9-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,6,7,8-hexachlorinated dibenzo-p-dioxin	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzo-p-dioxin	0.01
octachlorinated dibenzo-p-dioxin	0.001
2,3,7,8-tetrachlorinated dibenzofuran	0.1
2,3,4,7,8-pentachlorinated dibenzofuran	0.5
1,2,3,7,8-pentachlorinated dibenzofuran	0.05
1,2,3,4,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,7,8,9-hexachlorinated dibenzofuran	0.1
2,3,4,6,7,8-hexachlorinated dibenzofuran	0.1
1,2,3,4,6,7,8-heptachlorinated dibenzofuran	0.01
1,2,3,4,7,8,9-heptachlorinated dibenzofuran	0.01
Octachlorinated dibenzofuran	0.001

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~~c. Sum the products calculated in accordance with subdivision B 9 b of this section to obtain the total concentration of dioxins/furans emitted in terms of toxic equivalency.~~

~~10. Reference Method 26 shall be used to measure hydrogen chloride emissions. If the affected facility has selected the percentage reduction limits for hydrogen chloride under 9 VAC 5-40-6050, the percentage reduction in hydrogen chloride emissions ( $\%R_{HCl}$ ) is computed using the following formula:~~

$$\left(\%R_{HCl}\right)=\left(\frac{E_i - E_o}{E_i}\right) \times 100$$

~~where:~~

~~$\%R_{HCl}$  = percentage reduction of hydrogen chloride emissions achieved;~~

~~$E_i$  = hydrogen chloride emission concentration measured at the control device inlet, corrected to 7 percent oxygen (dry basis); and~~

~~$E_o$  = hydrogen chloride emission concentration measured at the control device outlet, corrected to 7 percent oxygen (dry basis).~~

~~11. Reference Method 29 shall be used to measure lead, cadmium, and mercury emissions. If the affected facility has selected the percentage reduction limits for metals under 9 VAC 5-40-6080, 9 VAC 5-40-6090, or 9 VAC 5-40-6100, the percentage reduction in emissions ( $\%R_{metal}$ ) is computed using the following formula:~~

$$\left(\%R_{metal}\right)=\left(\frac{E_i - E_o}{E_i}\right) \times 100$$

~~where:~~

~~$\%R_{metal}$  = percentage reduction of metal emission (lead, cadmium, or mercury)~~

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achieved:

$E_i$  = ~~metal emission concentration (lead, cadmium, or mercury) measured at the control device inlet, corrected to 7 percent oxygen (dry basis); and~~

$E_o$  = ~~metal emission concentration (lead, cadmium, or mercury) measured at the control device outlet, corrected to 7 percent oxygen (dry basis).~~

C. ~~Following the date on which the initial emissions test is completed or is required to be completed under 9 VAC 5-40-6180, whichever date comes first, the owner of an affected facility shall:~~

1. ~~Determine compliance with the opacity limit by conducting an annual emissions test (no more than 12 months following the previous emissions test) using the applicable procedures and test methods listed in subsection B of this section.~~

2. ~~Determine compliance with the particulate matter, carbon monoxide, and hydrogen chloride emission limits by conducting an annual emissions test (no more than 12 months following the previous emissions test) using the applicable procedures and test methods listed in subsection B of this section. If all three emissions tests over a three-year period indicate compliance with the emission limit for a pollutant (particulate matter, carbon monoxide, or hydrogen chloride), the owner may forego an emissions test for that pollutant for the subsequent two years. At a minimum, an emissions test for particulate matter, carbon monoxide, and hydrogen chloride shall be conducted every third year (no more than 36 months following the previous emissions test). If an emissions test conducted every third year indicates compliance with the emission limit for a pollutant (particulate matter, carbon monoxide, or hydrogen chloride), the owner may forego an emissions test for that pollutant for an~~

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~~additional two years. If any emissions test indicates noncompliance with the respective emission limit, an emissions test for that pollutant shall be conducted annually until all annual emissions tests over a three-year period indicate compliance with the emission limit. The use of the bypass stack during an emissions test shall invalidate the emissions test.~~

~~3. Facilities using a continuous emission monitoring system to demonstrate compliance with any of the emission limits under 9 VAC 5-40-6020 through 9 VAC 5-40-6100 shall:~~

~~a. Determine compliance with the appropriate emission limit(s) using a 12-hour rolling average, calculated each hour as the average of the previous 12 operating hours (not including startup, shutdown, or malfunction).~~

~~b. Operate all continuous emission monitoring systems in accordance with the applicable procedures under appendices B and F of 40 CFR Part 60.~~

~~D. The owner of an affected facility equipped with a dry scrubber followed by a fabric filter, a wet scrubber, or a dry scrubber followed by a fabric filter and wet scrubber shall:~~

~~1. Establish the appropriate maximum and minimum operating parameters, indicated in Table 444B of this article for each control system, as site specific operating parameters during the initial emissions test to determine compliance with the emission limits; and~~

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TABLE 4-44B.  
OPERATING PARAMETERS TO BE MONITORED  
AND MINIMUM MEASUREMENT AND RECORDING FREQUENCIES

OPERATING PARAMETERS TO BE MONITORED	MINIMUM FREQUENCY		CONTROL SYSTEM		
	DATA MEASUREMENT	DATA RECORDING	DRY SCRUBBER/ FABRIC FILTER	WET SCRUBBER	DRY SCRUBBER/ FABRIC FILTER & WET SCRUBBER
MAXIMUM OPERATING PARAMETERS					
MAXIMUM CHARGE RATE	CONTINUOUS	1 X HOUR	Y	Y	Y
MAXIMUM FABRIC FILTER INLET TEMPERATURE	CONTINUOUS	1 X MINUTE	Y		Y
MAXIMUM FLUE GAS TEMP	CONTINUOUS	1 X MINUTE		Y	Y
MINIMUM OPERATING PARAMETERS					
MINIMUM SECONDARY CHAMBER TEMP	CONTINUOUS	1 X MINUTE	Y	Y	Y
MINIMUM DIOXIN/FURAN SORBENT FLOW RATE	HOURLY	1 X HOUR	Y		Y
MINIMUM HCl SORBENT FLOW RATE	HOURLY	1 X HOUR	Y		Y
MINIMUM Hg SORBENT FLOW RATE	HOURLY	1 X HOUR	Y		Y
MINIMUM PRESSURE DROP ACROSS WET SCRUBBER OR MINIMUM HORSEPOWER OR AMPERAGE TO WET SCRUBBER	CONTINUOUS	1 X MINUTE		Y	Y
MINIMUM SCRUBBER LIQUOR FLOW RATE	CONTINUOUS	1 X MINUTE		Y	Y
MINIMUM SCRUBBER LIQUOR pH	CONTINUOUS	1 X MINUTE		Y	Y

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~~2. Following the date on which the initial emissions test is completed or is required to be completed under 9 VAC 5-40-6180, whichever date comes first, ensure that the affected facility does not operate above any of the applicable maximum operating parameters or below any of the applicable minimum operating parameters listed in Table 4-44B of this article and measured as three-hour rolling averages (calculated each hour as the average of the previous three operating hours) at all times except during periods of startup, shutdown and malfunction. Operating parameter limits do not apply during emissions tests. Operation above the established maximum or below the established minimum operating parameter(s) shall constitute a violation of established operating parameter(s).~~

~~E. Except as provided in subsection H of this section, for affected facilities equipped with a dry scrubber followed by a fabric filter:~~

~~1. Operation of the affected facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a three-hour rolling average) simultaneously shall constitute a violation of the carbon monoxide emission limit.~~

~~2. Operation of the affected facility above the maximum fabric filter inlet temperature, above the maximum charge rate, and below the minimum dioxin/furan sorbent flow rate (each measured on a three-hour rolling average) simultaneously shall constitute a violation of the dioxin/furan emission limit.~~

~~3. Operation of the affected facility above the maximum charge rate and below the minimum hydrogen chloride sorbent flow rate (each measured on a three-hour rolling average) simultaneously shall constitute a violation of the hydrogen chloride emission limit.~~

~~4. Operation of the affected facility above the maximum charge rate and below the minimum mercury sorbent flow rate (each measured on a three-hour rolling average) simultaneously shall~~

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~~constitute a violation of the mercury emission limit.~~

~~5. Use of the bypass stack (except during startup, shutdown, or malfunction) shall constitute a violation of the particulate matter, dioxin/furan, hydrogen chloride, lead, cadmium, and mercury emission limits.~~

~~E. Except as provided in subsection H of this section, for affected facilities equipped with a wet scrubber:~~

~~1. Operation of the affected facility above the maximum charge rate and below the minimum pressure drop across the wet scrubber or below the minimum horsepower or amperage to the system (each measured on a three-hour rolling average) simultaneously shall constitute a violation of the particulate matter emission limit.~~

~~2. Operation of the affected facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a three-hour rolling average) simultaneously shall constitute a violation of the carbon monoxide emission limit.~~

~~3. Operation of the affected facility above the maximum charge rate, below the minimum secondary chamber temperature, and below the minimum scrubber liquor flow rate (each measured on a three-hour rolling average) simultaneously shall constitute a violation of the dioxin/furan emission limit.~~

~~4. Operation of the affected facility above the maximum charge rate and below the minimum scrubber liquor pH (each measured on a three-hour rolling average) simultaneously shall constitute a violation of the hydrogen chloride emission limit.~~

~~5. Operation of the affected facility above the maximum flue gas temperature and above the maximum charge rate (each measured on a three-hour rolling average) simultaneously shall~~

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~~constitute a violation of the mercury emission limit.~~

~~6. Use of the bypass stack (except during startup, shutdown, or malfunction) shall constitute a violation of the particulate matter, dioxin/furan, hydrogen chloride, lead, cadmium, and mercury emission limits.~~

~~G. Except as provided in subsection H of this section, for affected facilities equipped with a dry scrubber followed by a fabric filter and a wet scrubber:~~

~~1. Operation of the affected facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a three-hour rolling average) simultaneously shall constitute a violation of the carbon monoxide emission limit.~~

~~2. Operation of the affected facility above the maximum fabric filter inlet temperature, above the maximum charge rate, and below the minimum dioxin/furan sorbent flow rate (each measured on a three-hour rolling average) simultaneously shall constitute a violation of the dioxin/furan emission limit.~~

~~3. Operation of the affected facility above the maximum charge rate and below the minimum scrubber liquor pH (each measured on a three-hour rolling average) simultaneously shall constitute a violation of the hydrogen chloride emission limit.~~

~~4. Operation of the affected facility above the maximum charge rate and below the minimum mercury sorbent flow rate (each measured on a three-hour rolling average) simultaneously shall constitute a violation of the mercury emission limit.~~

~~5. Use of the bypass stack (except during startup, shutdown, or malfunction) shall constitute a violation of the particulate matter, dioxin/furan, hydrogen chloride, lead, cadmium, and mercury emission limits.~~

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~~H. The owner of an affected facility may conduct a repeat emissions test within 30 days of violation of applicable operating parameter(s) to demonstrate that the affected facility is not in violation of the applicable emission limit(s). Repeat emissions tests conducted pursuant to this subsection shall be conducted using the identical operating parameters that indicated a violation under subsection E, F, or G of this section.~~

~~I. The owner of an affected facility using an air pollution control device other than a dry scrubber followed by a fabric filter, a wet scrubber, or a dry scrubber followed by a fabric filter and a wet scrubber to comply with the emission limits under 9 VAC 540-6020 through 9 VAC 540-6100 shall petition the board for other site-specific operating parameters to be established during the initial emissions test and continuously monitored thereafter. The owner shall not conduct the initial emissions test until after the petition has been approved by the board.~~

~~J. The owner of an affected facility may conduct a repeat emissions test at any time to establish new values for the operating parameters. The board may request a repeat emissions test at any time.~~

~~K. Small, rural HMIWIs subject to the emission limits under 9 VAC 5-40-6020 through 9 VAC 5-40-6100 shall meet the following compliance and emissions testing requirements:~~

~~1. Conduct the emissions testing requirements in subsections B 1 through B 9, B 11 (mercury only), and C 1 of this section. The 2,000 lb/week limitation under 9 VAC 5-40-6010 does not apply during emissions tests.~~

~~2. Establish maximum charge rate and minimum secondary chamber temperature as site-specific operating parameters during the initial emissions test to determine compliance with applicable emission limits.~~

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~~3. Following the date on which the initial emissions test is completed or is required to be completed under 9 VAC 5-40-6180, whichever date comes first, ensure that the affected facility does not operate above the maximum charge rate or below the minimum secondary chamber temperature measured as three-hour rolling averages (calculated each hour as the average of the previous three operating hours) at all times except during periods of startup, shutdown and malfunction. Operating parameter limits do not apply during emissions tests. Operation above the maximum charge rate or below the minimum secondary chamber temperature shall constitute a violation of the established operating parameter(s).~~

~~4. Except as provided in subdivision B 5 of this section, operation of the affected facility above the maximum charge rate and below the minimum secondary chamber temperature (each measured on a three-hour rolling average) simultaneously shall constitute a violation of the particulate matter, carbon monoxide, and dioxin/furan emission limits.~~

~~5. The owner of an affected facility may conduct a repeat emissions test within 30 days of violation of applicable operating parameter(s) to demonstrate that the affected facility is not in violation of the applicable emission limit(s). Repeat emissions tests conducted pursuant to this subsection must be conducted using the identical operating parameters that indicated a violation under subdivision K 4 of this section.~~

~~L. Owners of affected facilities shall perform monitoring as follows, except as provided for under subsection M of this section.~~

~~1. The owner of an affected facility shall install, calibrate (to manufacturers' specifications), maintain, and operate devices (or establish methods) for monitoring the applicable maximum and minimum operating parameters listed in Table 4-44B of this article such that these devices~~

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~~(or methods) measure and record values for these operating parameters at the frequencies indicated in Table 4-44B of this article at all times except during periods of startup and shutdown.~~

~~2. The owner of an affected facility shall install, calibrate (to manufacturers' specifications), maintain, and operate a device or method for measuring the use of the bypass stack including date, time, and duration.~~

~~3. The owner of an affected facility using something other than a dry scrubber followed by a fabric filter, a wet scrubber, or a dry scrubber followed by a fabric filter and a wet scrubber to comply with the emission limits under 9 VAC 5-40-6020 through 9 VAC 5-40-6100 shall install, calibrate (to the manufacturers' specifications), maintain, and operate the equipment necessary to monitor the site-specific operating parameters developed pursuant to subsection I of this section.~~

~~4. The owner of an affected facility shall obtain monitoring data at all times during HMIWI operation except during periods of monitoring equipment malfunction, calibration, or repair. At a minimum, valid monitoring data shall be obtained for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter that the affected facility is combusting hospital waste and medical/infectious waste or both.~~

~~M. Small, rural HMIWI subject to the emission limits under 9 VAC 5-40-6020 through 9 VAC 5-40-6100 shall meet the following monitoring requirements:~~

~~1. Install, calibrate (to manufacturers' specifications), maintain, and operate a device for measuring and recording the temperature of the secondary chamber on a continuous basis, the output of which shall be recorded, at a minimum, once every minute throughout operation.~~

~~2. Install, calibrate (to manufacturers' specifications), maintain, and operate a device which automatically measures and records the date, time, and weight of each charge fed into the HMIWI.~~

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~~3. The owner of an affected facility shall obtain monitoring data at all times during HMIWI operation except during periods of monitoring equipment malfunction, calibration, or repair. At a minimum, valid monitoring data shall be obtained for 75 percent of the operating hours per day for 90 percent of the operating hours per calendar quarter that the affected facility is combusting hospital waste and medical/infectious waste or both.~~

~~9 VAC 5-40-6190. Recordkeeping and reporting.~~

~~A. The owner of an affected facility shall maintain the following information (as applicable) for a period of at least five years:~~

- ~~1. Calendar date of each record;~~
- ~~2. Records of the following data:~~
  - ~~a. Concentrations of any pollutant listed in 9 VAC 5-40-6020 through 9 VAC 5-40-6100 or measurements of opacity as determined by the continuous emission monitoring system (if applicable);~~
  - ~~b. HMIWI charge dates, times, and weights and hourly charge rates;~~
  - ~~c. Fabric filter inlet temperatures during each minute of operation, as applicable;~~
  - ~~d. Amount and type of dioxin/furan sorbent used during each hour of operation, as applicable;~~
  - ~~e. Amount and type of mercury sorbent used during each hour of operation, as applicable;~~
  - ~~f. Amount and type of hydrogen chloride sorbent used during each hour of operation, as applicable;~~

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- ~~g. Secondary chamber temperatures recorded during each minute of operation;~~
- ~~h. Liquor flow rate to the wet scrubber inlet during each minute of operation, as applicable;~~
- ~~i. Horsepower or amperage to the wet scrubber during each minute of operation, as applicable;~~
- ~~j. Pressure drop across the wet scrubber system during each minute of operation, as applicable,~~
- ~~k. Temperature at the outlet from the wet scrubber during each minute of operation, as applicable;~~
- ~~l. pH at the inlet to the wet scrubber during each minute of operation, as applicable,~~
- ~~m. Records indicating use of the bypass stack, including dates, times, and durations, and~~
- ~~n. For affected facilities complying with 9 VAC 5-40-6180.1 and 9 VAC 5-40-6180.1.3, the owner shall maintain all operating parameter data collected.~~

~~3. Identification of calendar days for which data on emission rates or operating parameters specified under subdivision A 2 of this section have not been obtained, with an identification of the emission rates or operating parameters not measured, reasons for not obtaining the data, and a description of corrective actions taken.~~

~~4. Identification of calendar days, times and durations of malfunctions, a description of the malfunction and the corrective action taken.~~

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~~5. Identification of calendar days for which data on emission rates or operating parameters specified under subdivision A 2 of this section exceeded the applicable limits, with a description of the exceedances, reasons for such exceedances, and a description of corrective actions taken.~~

~~6. The results of the initial, annual, and any subsequent emissions tests conducted to determine compliance with the emission limits or to establish operating parameters, as applicable.~~

~~7. Records showing the names of HMIWI operators who have completed review of the information in 9 VAC 5-40-6150 H as required by 9 VAC 5-40-6150 I, including the date of the initial review and all subsequent annual reviews;~~

~~8. Records showing the names of the HMIWI operators who have completed the HMIWI operator training requirements, including documentation of training and the dates of the training;~~

~~9. Records showing the names of the HMIWI operators who have met the criteria for qualification under 9 VAC 5-40-6150 and the dates of their qualification; and~~

~~10. Records of calibration of any monitoring devices as required under 9 VAC 5-40-6180 L 1, 2 and 3.~~

~~B. The owner of an affected facility shall submit the information specified in subdivisions B 1 through B 3 of this section no later than 60 days following the initial emissions test. All reports shall be signed by the facilities manager.~~

~~1. The initial emissions test data as recorded under 9 VAC 5-40-6180 B 1 through 11, as applicable.~~

~~2. The values for the site-specific operating parameters established pursuant to 9 VAC 5-40-6180 D or I, as applicable.~~

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~~3. The waste management plan as specified in 9 VAC 5-40-6150.~~

~~C. An annual report shall be submitted one year following the submission of the information in subsection B of this section and subsequent reports shall be submitted no more than 12 months following the previous report (once the unit is subject to a federal operating permit as provided in 9 VAC 5-40-6000 F, the owner of an affected facility must submit these reports semiannually). The annual report shall include the information specified in subdivisions C 1 through C 8 of this section. All reports shall be signed by the facilities manager.~~

~~1. The values for the site-specific operating parameters established pursuant to 9 VAC 5-40-6180 D or I, as applicable.~~

~~2. The highest maximum operating parameter and the lowest minimum operating parameter, as applicable, for each operating parameter recorded for the calendar year being reported, pursuant to 9 VAC 5-40-6180 D or I, as applicable.~~

~~3. The highest maximum operating parameter and the lowest minimum operating parameter, as applicable for each operating parameter recorded pursuant to 9 VAC 5-40-6180 D or I for the calendar year preceding the year being reported, in order to provide the board with a summary of the performance of the affected facility over a two-year period.~~

~~4. Any information recorded under subdivisions A 3 through A 5 of this section for the calendar year being reported.~~

~~5. Any information recorded under subdivisions A 3 through A 5 of this section for the calendar year preceding the year being reported, in order to provide the board with a summary of the performance of the affected facility over a two-year period.~~

~~6. If an emissions test was conducted during the reporting period, the results of that~~

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~~test.~~

~~7. If no exceedances or malfunctions were reported under subdivisions A 3 through A 5 of this section for the calendar year being reported, a statement that no exceedances occurred during the reporting period.~~

~~8. Any use of the bypass stack, the duration, reason for malfunction, and corrective action taken.~~

~~D. The owner of an affected facility shall submit semiannual reports containing any information recorded under subdivisions A 3 through A 5 of this section no later than 60 days following the reporting period. The first semiannual reporting period ends six months following the submission of information in subsection B of this section. Subsequent reports shall be submitted no later than six calendar months following the previous report. All reports shall be signed by the facilities manager.~~

~~E. All records specified under subsection A of this section shall be maintained onsite in either paper copy or computer-readable format, unless an alternative format is approved by the board.~~

~~E. The owner of each small, rural HMIWI shall:~~

~~1. Maintain records of the annual equipment inspections, any required maintenance, and any repairs not completed within 10 days of an inspection or the timeframe established by the board; and~~

~~2. Submit an annual report containing information recorded under subdivision 1 of this subsection no later than 60 days following the year in which data were collected. Subsequent reports shall be sent no later than 12 calendar months following the previous report (once the unit is subject to a federal operating permit as provided in 9 VAC 5-40-6000 F, the owner must submit these reports semiannually). The report shall be signed by the facilities manager.~~

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~~9 VAC 5-40-6200. Compliance schedules.~~

~~A. Except as provided in subsection B of this article, owners shall:~~

~~1. Comply with the emission limits in this article as expeditiously as possible but in no case later than (one year after the effective date of this article), and~~

~~2. Conduct the initial emissions test of the air pollution control device no later than (180 days plus one year after the effective date of this article).~~

~~B. Until (six months after the effective date of this article), owners of affected facilities may petition the board for an extension to the compliance date in subsection A of this section. This petition shall include the following:~~

~~1. Documentation of the analyses undertaken to support the need for an extension, including an explanation of why until September 15, 2002 is needed to comply with this article while compliance by (one year after the effective date of this article) is not feasible. The documentation shall also include an evaluation of the option to transport the waste offsite to a commercial medical waste treatment and disposal facility on a temporary or permanent basis; and~~

~~2. Documentation of measurable and enforceable incremental steps of progress to be taken towards compliance with the emission guidelines, including:~~

~~a. If applicable, date for submitting a petition for site-specific operating parameters under 40 CFR Part 60.56c(i).~~

~~b. Date for submittal of the control plan;~~

~~c. Date for obtaining services of an architectural and engineering firm regarding the air pollution control device(s);~~

~~d. Date for obtaining design drawings of the air pollution control device(s);~~

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- ~~e. Date for ordering the air pollution control device(s);~~
- ~~f. Date for obtaining the major components of the air pollution control device(s);~~
- ~~h. Date for initiation of site preparation for installation of the air pollution control device(s);~~
- ~~h. Date for initiation of installation of the air pollution control device(s);~~
- ~~i. Date for initial startup of the air pollution control device(s);~~
- ~~j. Date for initial emissions test(s) of the air pollution control device(s); and~~
- ~~k. Date for final compliance.~~

~~9 VAC 5-40-6210. Registration.~~

~~The provisions of 9 VAC 5-20-160 (Registration) apply.~~

~~9 VAC 5-40-6220. Facility and control equipment maintenance or malfunction.~~

~~The provisions of 9 VAC 5-20-180 (Facility and control equipment maintenance or malfunction) apply.~~

~~9 VAC 5-40-6230. Permits.~~

~~A permit may be required prior to beginning any of the activities specified below if the provisions of 9 VAC 5 Chapter 50 (9 VAC 5-50-10 et seq.) and 9 VAC 5 Chapter 80 (9 VAC 5-80-10 et seq.) apply. Owners contemplating such action should review those provisions and contact the appropriate regional office for guidance on whether those provisions apply.~~

- ~~1. Construction of a facility.~~
- ~~2. Reconstruction (replacement of more than half) of a facility.~~
- ~~3. Modification (any physical change to equipment) of a facility.~~

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4. ~~Relocation of a facility.~~
5. ~~Reactivation (restart-up) of a facility.~~
6. ~~Operation of a facility.~~

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9 VAC 5 CHAPTER 20  
GENERAL PROVISIONS

9 VAC 5-20-21. Documents incorporated by reference.

A. The Administrative Process Act and Virginia Register Act provide that state regulations may incorporate documents by reference. Throughout these regulations, documents of the types specified below have been incorporated by reference.

1. United States Code.
2. Code of Virginia.
3. Code of Federal Regulations.
4. Federal Register.
5. Technical and scientific reference documents.

Additional information on key federal regulations and non-statutory documents incorporated by reference and their availability may be found in subsection E of this section.

B. Any reference in these regulations to any provision of the Code of Federal Regulations (CFR) shall be considered as the adoption by reference of that provision. The specific version of the provision adopted by reference shall be that contained in the CFR (1998) in effect July 1, 1998. In making reference to the Code of Federal Regulations, 40 CFR Part 35 means Part 35 of Title 40 of the Code of Federal Regulations; 40 CFR 35.20 means Section 35.20 in Part 35 of Title 40 of the Code of Federal Regulations.

C. Failure to include in this section any document referenced in the regulations shall not invalidate the applicability of the referenced document.

D. Copies of materials incorporated by reference in this section may be examined by the

REGULATIONS FOR THE CONTROL AND ABATEMENT OF AIR POLLUTION (9 VAC 5 CHAPTER 40)

public at the headquarters office of the Department of Environmental Quality, Eighth Floor, 629 East Main Street, Richmond, Virginia between 8:30 a.m. and 4:30 p.m. of each business day.

E. Information on federal regulations and non-statutory documents incorporated by reference and their availability may be found below in this subsection.

1. Code of Federal Regulations.

a. The provisions specified below from the Code of Federal Regulations (CFR) are incorporated herein by reference.

(1) 40 CFR Part 50 - National Primary and Secondary Ambient Air Quality Standards.

(a) Appendix A - Reference Method for the Determination of Sulfur Dioxide in the Atmosphere (Pararosaniline Method).

(b) Appendix B - Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method).

(c) Appendix C - Measurement Principle and Calibration Procedure for the Continuous Measurement of Carbon Monoxide in the Atmosphere (Non-Dispersive Infrared Photometry).

(d) Appendix D - Measurement Principle and Calibration Procedure for the Measurement of Ozone in the Atmosphere.

(e) Appendix E - Reference Method for Determination of Hydrocarbons Corrected for Methane.

(f) Appendix F - Measurement Principle and Calibration Procedure for the Measurement of Nitrogen Dioxide in the Atmosphere (Gas Phase

REGULATIONS FOR THE CONTROL AND ABATEMENT OF AIR POLLUTION (9 VAC 5 CHAPTER 40)

Chemiluminescence).

(g) Appendix G - Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air.

(h) Appendix H - Interpretation of the National Ambient Air Quality Standards for Ozone.

(i) Appendix I - Reserved.

(j) Appendix J - Reference Method for the Determination of Particulate Matter as PM<sub>10</sub> in the Atmosphere.

(k) Appendix K - Interpretation of the National Ambient Air Quality Standards for Particulate Matter.

(2) 40 CFR Part 51 - Requirements for Preparation, Adoption, and Submittal of Implementation Plans.

Appendix M - Recommended Test Methods for State Implementation Plans.

Appendix S - Emission Offset Interpretive Ruling.

Appendix W - Guideline on Air Quality Models (Revised).

(3) 40 CFR Part 58 - Ambient Air Quality Surveillance.

Appendix B - Quality Assurance Requirements for Prevention of Significant Deterioration (PSD) Air Monitoring.

(4) 40 CFR Part 60 - Standards of Performance for New Stationary Sources.

The specific provisions of 40 CFR Part 60 incorporated by

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reference are found in Article 5 (9 VAC 5-50-400 et seq.) of Part II of Chapter 50, Rule 5-5, Environmental Protection Agency Standards of Performance for New Stationary Sources.

(5) 40 CFR Part 61 - National Emission Standards for Hazardous Air Pollutants.

The specific provisions of 40 CFR Part 61 incorporated by reference are found in Article 1 (9 VAC 5-60-60 et seq.) of Part II of Chapter 60, Rule 6-1, Environmental Protection Agency National Emission Standards for Hazardous Air Pollutants.

(6) 40 CFR Part 63 - National Emission Standards for Hazardous Air Pollutants for Source Categories.

The specific provisions of 40 CFR Part 63 incorporated by reference are found in Article 2 (9 VAC 5-60-90 et seq.) of Part II of Chapter 60, Rule 6-2, Environmental Protection Agency National Emission Standards for Hazardous Air Pollutants for Source Categories.

b. Copies may be obtained from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402; phone (202) 783-3238.

2. U.S. Environmental Protection Agency.

a. The following documents from the U.S. Environmental Protection Agency are incorporated herein by reference:

(1) Reich Test, Atmospheric Emissions from Sulfuric Acid Manufacturing Processes, Public Health Service Publication No. PB82250721, 1980.

(2) Compilation of Air Pollutant Emission Factors (AP-42). Volume I: Stationary and Area Sources, Publication No. PB95196028, 1995; Volume II: Supplement A, Publication No. PB96192497, 1996.

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b. Copies may be obtained from: U.S. Department of Commerce, National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161; phone (703) 487-4650.

3. U.S. government.

a. The following document from the U.S. government is incorporated herein by reference: Standard Industrial Classification Manual, 1987 (U.S. Government Printing Office stock number 041-001-00-314-2).

b. Copies may be obtained from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402; phone (202) 512-1800.

4. American Society for Testing and Materials (ASTM)

a. The documents specified below from the American Society for Testing and Materials are incorporated herein by reference.

(1) D323-94, "Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)" from Section 5, Volume 05.01 of the 1985 Annual Book of ASTM Standards.

(2) D97-93, "Standard Test Method for Pour Point of Petroleum Oils" from Section 5, Volume 05.01 of the 1989 Annual Book of ASTM Standards.

(3) D129-91, "Standard Test Method for Sulfur in Petroleum Products (General Bomb Method)," 1991.

(4) D388-95, "Standard Classification of Coals by Rank," 1995.

(5) D396-92, "Standard Specification for Fuel Oils," 1992.

(6) D975-94, "Standard Specification for Diesel Fuel Oils," 1994.

(7) D1072-90, "Standard Test Method for Total Sulfur in Fuel Gases,"

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1990, reapproved 1994.

(8) D1265-92, "Standard Practice for Sampling Liquefied Petroleum (LP) Gases (Manual Method)," 1992.

(9) D2622-94, "Standard Test Method for Sulfur in Petroleum Products by X-Ray Spectrometry," 1994.

(10) D4057-88, "Standard Practice for Manual Sampling of Petroleum and Petroleum Products," 1988.

(11) D4294-90, "Standard Test Method for Sulfur in Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectroscopy," 1990.

b. Copies may be obtained from: American Society for Testing Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103; phone (610) 832-9585.

5. American Petroleum Institute (API)

a. The following document from the American Petroleum Institute is incorporated herein by reference: API Publication 2517, Evaporation Loss from External Floating Roof Tanks, Third Edition, 1989.

b. Copies may be obtained from: American Petroleum Institute, 2101 L Street, Northwest, Washington, D.C. 20037; phone (202) 682-8000.

6. American Conference of Governmental Industrial Hygienists (ACGIH)

a. The following document from the ACGIH is incorporated herein by reference: 1991-1992 Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices (ACGIH Handbook).

b. Copies may be obtained from: ACGIH, 6500 Glenway Avenue, Building

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D-7, Cincinnati, Ohio 45211-4438; phone (513) 742-2020.

7. National Fire Prevention Association (NFPA)

a. The documents specified below from the National Fire Prevention Association are incorporated herein by reference.

(1) NFPA 385, Standard for Tank Vehicles for Flammable and Combustible Liquids, 1990 Edition.

(2) NFPA 30, Flammable and Combustible Liquids Code, 1993 Edition.

(3) NFPA 30A, Automotive and Marine Service Station Code, 1993 Edition.

b. Copies may be obtained from the National Fire Prevention Association, Batterymarch Park, Quincy, Massachusetts 02269; phone (617) 770-3000.

8. American Society of Mechanical Engineers (ASME).

a. The documents specified below from the American Society of Mechanical Engineers are incorporated herein by reference.

(1) ASME Power Test Codes: Test Code for Steam Generating Units, Power Test Code 4.1--1964 (R1991).

(2) ASME Interim Supplement 19.5 on Instruments and Apparatus: Application, Part II of Fluid Meters, 6th edition (1971).

(3) Standard for the Qualification and Certification of Resource Recovery Facility Operators, ASME QRO-1-1994.

b. Copies may be obtained from the American Society of Mechanical

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Engineers, 22 Law Drive, Fairfield, New Jersey, 07004.

~~9. Reserved.~~

~~10. American Hospital Association (AHA)~~

~~a. The following document from the American Hospital Association is incorporated herein by reference: An Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities, AHA Catalog no. W5-057007, 1993.~~

~~b. Copies may be obtained from: American Hospital Association, P.O. Box 92683, Chicago, IL 60675-2683; phone (800) 242-2626.~~

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9 VAC 5 CHAPTER 20.  
GENERAL PROVISIONS.

PART II.  
Air Quality Programs.

9 VAC 5-20-202. Metropolitan statistical areas.

Metropolitan Statistical Areas are geographically defined as follows:

<del>Title</del>	<del>Geographical Area</del>
Bristol MSA	Bristol City Scott County Washington County
Charlottesville MSA	Charlottesville City Albemarle County Fluvanna County Greene County
Danville MSA	Danville City Pittsylvania County
Lynchburg MSA	<del>Bedford City</del> Lynchburg City Amherst County <del>Bedford County</del> Campbell County
Norfolk-Virginia Beach-Newport	Chesapeake City
News MSA	Norfolk City

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	Portsmouth City
	Suffolk City
	Virginia Beach City
	Hampton City
	Newport News City
	Poquoson City
	Williamsburg City
	Gloucester County
	<del>Isle of Wight County</del>
	James City County
	<del>Mathews County</del>
	York County
Richmond-Petersburg MSA	Richmond City
	Colonial Heights City
	Hopewell City
	Petersburg City
	Charles City County
	Chesterfield County
	Goochland County
	Hanover County
	Henrico County
	New Kent County

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	Powhatan County
	Prince George County
	Dinwiddie County
Roanoke MSA	Roanoke City
	Salem City
	Botetourt County
	Roanoke County
National Capital MSA	Alexandria City
	Fairfax City
	Falls Church City
	<del>Fredericksburg City</del>
	Manassas City
	Manassas Park City
	Arlington County
	<del>Clarke County</del>
	<del>Culpeper County</del>
	Fairfax County
	<del>King George County</del>
	Loudoun County
	Prince William County
	<del>Spottsylvania County</del>

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Stafford County

~~Warren County~~

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